Management for Engineers

Preamble

- Thiscourseis intended to help the students to learn the basic concepts and functions of management and its role in the performance of an organization and to understand various decision-making approaches available for managers to achieve excellence. Learners shall have a broad view of different functional areas of management like operations, human resource, finance and marketing.

Course Objectives

- Co1: Explainthecharacteristics of management in the contemporary context(Cognitive Knowledge level: **Understand).**

- Co2: Describe the functions of management (Cognitive Knowledge level: **Understand).**

- Co3: Demonstrate ability in decision making process and productivity analysis (Cognitive Knowledge level: **Understand).**

- Co4: Illustrate project management technique and develop a project schedule (Cognitive Knowledge level: **Apply).**

- Co5: Summarize the functional areas of management (Cognitive Knowledge level: **Understand).**

- Co6: Comprehend the concept of entrepreneurship and create business plans (Cognitive Knowledge level: **Understand).**

Syllabus (Module 1 – Introduction to Management Theory)

- Introduction to managementtheory,Management Defined, Characteristic of Management, Managementas an art-profession, System approaches to Management, Task and Responsibilities of a professional Manager, Levels of Manager and Skill required.

Syllabus (Module 2 – Management and Organization)

- Management Process, Planning types,Mission, Goals, Strategy,Programmes, Procedures,Organising, Principles of Organisation, Delegation, Span of Control,Organisation Structures, Directing, Leadership, Motivation, Controlling.

Syllabus (Module 3 – Productivity and Organization)

- Conceptof productivity anditsmeasurement; Competitiveness; Decisionmakingprocess;decision making under certainty, risk and uncertainty; Decision trees; Models of decision making.

Syllabus (Module 4 – Project Management)

- ProjectManagement, Networkconstruction,Arrow diagram, Redundancy. CPM and PERT Networks, Scheduling computations, PERT time estimates, Probability of completion of project, Introduction to crashing.

Syllabus (Module 5 – Functional Areas of Management)

- Introduction to functional areas ofmanagement,Operations management, Human resources management, Marketing management, Financial management, Entrepreneurship, Business plans, Corporate social responsibility, Patents and Intellectual property rights.

Text Books:

- 1. H. Koontz, and H. Weihrich, Essentials of Management: An International Perspective. 8th ed., McGraw-Hill, 2009.
- 2. P C Tripathi and P N Reddy, Principles of management, TMH, 4th edition, 2008.
- 3. P. Kotler, K. L. Keller, A. Koshy, and M. Jha, Marketing Management: A South Asian Perspective. 14th ed., Pearson, 2012.
- 4. M. Y. Khan, and P. K. Jain, Financial Management, Tata-McGraw Hill, 2008.
- 5. R. D. Hisrich, and M. P. Peters, Entrepreneurship: Strategy, Developing, and Managing a New Enterprise, 4th ed., McGraw-Hill Education, 1997.
- 6. D. J. Sumanth, Productivity Engineering and Management, McGraw-Hill Education, 1985.
- 7. K.Ashwathappa, 'Human Resources and Personnel Management', TMH, 3 rd edition, 2005.
- 8. R. B. Chase, Ravi Shankar and F. R. Jacobs, Operations and Supply Chain Management, 14th ed. McGraw Hill Education (India), 2015.

Teaching Plan

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Syllabus (Module 1 – Introduction to Management Theory)

- Introduction to managementtheory,Management Defined, Characteristic of Management, Managementas an art-profession, System approaches to Management, Task and Responsibilities of a professional Manager, Levels of Manager and Skill required.

Introduction to Management

Engineering Management

- **Engineering** - Technicalexcellence and social compatibility in workplace are both important.

- **Management** - Broad knowledge and interest, managerial perspective, training (lead, organize, plan and control) and aptitude to manage are success factors.

- **Engineering Management** - Insight to use technologies for creating business benefits.

Definitions

- "Management is the art of getting things done by other people" (Mary Parker Follett, 1941)

- "Management is an art of getting things done through and with people in formally organized groups" (Harold Koontz)

- "Management is the art of directing and inspiring people" (J. D. Mooney and A.C. Railey)

Definitions

- "To manage is to forecast , to plan, to organize, to co-ordinate and to control" (Henry Fayol)

- "Management is principally the task of planning, coordinating, motivating and controlling the efforts of others towards a specific objective" (James L. Lundy)

- It is the art and science of organizing and directing human efforts applied to control forces and utilize the material of nature for the benefit of mankind (ASME)

- The process of optimising human, material and financial contributions for achievement of organizational goals. (Pearce and Robinson, 1989).

Definitions

- "Management is a multipurposeorgan that manages a business and manages manager , and manages worker and work" (Peter Drucker)

- "Management is knowing exactly what you want men do, and then seeing that they do it in the best and cheapest way." (FW Taylor)

Defining Management

- The above definitions arenotuniversallyaccepted definitions as it fails to address
    - The functions of manager
    - Ignores scientific aspect of management
    - Ignores human aspect and treats peopleasmerelymeansofgettingthingsdone.
    - The role ofinternaland external environmentisignored.

- "Management is the process of planning, organizing, directing and controlling activities of and using resources of an organization for accomplishing the organizational goals efficiently and effectively in an ever changing environment"

CHARACTERISTICS /FEATURES OF MANAGEMENT

- Management is Multidisciplinarydiscipline
- Management is a factor of production – 5 Ms in management as factor of production
  - Men
  - Material
  - Money
  - Methods
  - Machines
- Management is a social process – CSR
- Management is a dynamic function
- Management is situational
- Management is an Intangible force

CHARACTERISTICS /FEATURES OF MANAGEMENT

- Management is anactivity/process
- Management is action based and achievement oriented
- Management involves achieving results through the efforts of others
- Management is a group activity
- Management has no substitute
- Management is all pervasive
- Management is an art , science as well as a profession

CHARACTERISTICS OF MANAGEMENT

- Management is an environment oriented activity.
- Management is optimally utilizing the resources
- Management aims at co-ordination of activities
- Management follows certain principles {delegation of authority, centralization of authority, decentralization of authority}
- Management is innovative [techniques are flexible, dynamic and innovative]
- Management has different operational levels

Top Executives

Middle-Level Managers

First-Level Managers

Art Vs Science

Art	Science
Based on practice and creativity	Based on experimentation
It is theoretical body of knowledge	Is a systematized body of knowledge
Has personalized application	Has universal application

Management as Science

- **Systematic body of knowledge:** Science is organised and systematic study material is available which is used to acquire the knowledge of science. Like science in management also there is availability of systematic and organised study material.

- **Scientific principles are derived on the basis of logical and scientific observations:** The scientists perform logical observation before deriving any principle or theory. They are very objective while doing the observations. But when managers are observing they have to observe human beings and observation of human being cannot be purely logical and objective.

Management as Science

•**Principles are based on repeated experiments:** Before developing scientific principles scientists test these principles under different conditions and places. Similarly, managers also test and experiment managerial principles under different conditions in different organisations.

•**Universal Validity:** Scientific principles have universal application and validity. Management principles are not exact like scientific principles so their application and use is not universal. They have to be modified according to the given situation. So this feature of science is not present in management.

Management as Science

Replication is possible: In science replication is possible as when two scientists are undertaking the same investigation working independently and treating the same data under the same conditions may desire or obtain the identical or exactly same result.

Management as an Art

- **Systematic body of knowledge/Existence of theoretical knowledge:** In every art there is systematic and organized study material available to acquire theoretical knowledge of the art. In management also there is systematic and organised body of knowledge available which can help in acquiring managerial studies.

- **Personalised application:** Every artist must have personal skill and creativity to apply that knowledge. In management also all managers learn same management theories and principles.

Management as an Art

- **Based on Practice and creativity:** The artist requires regular practice of art to become more fine and perfect. Without practice artists lose their perfection. Art requires creative practice, i.e., artist must add his creativity to the theoretical knowledge he has learned. Same way with experience managers also improves their managerial skills and efficiency.
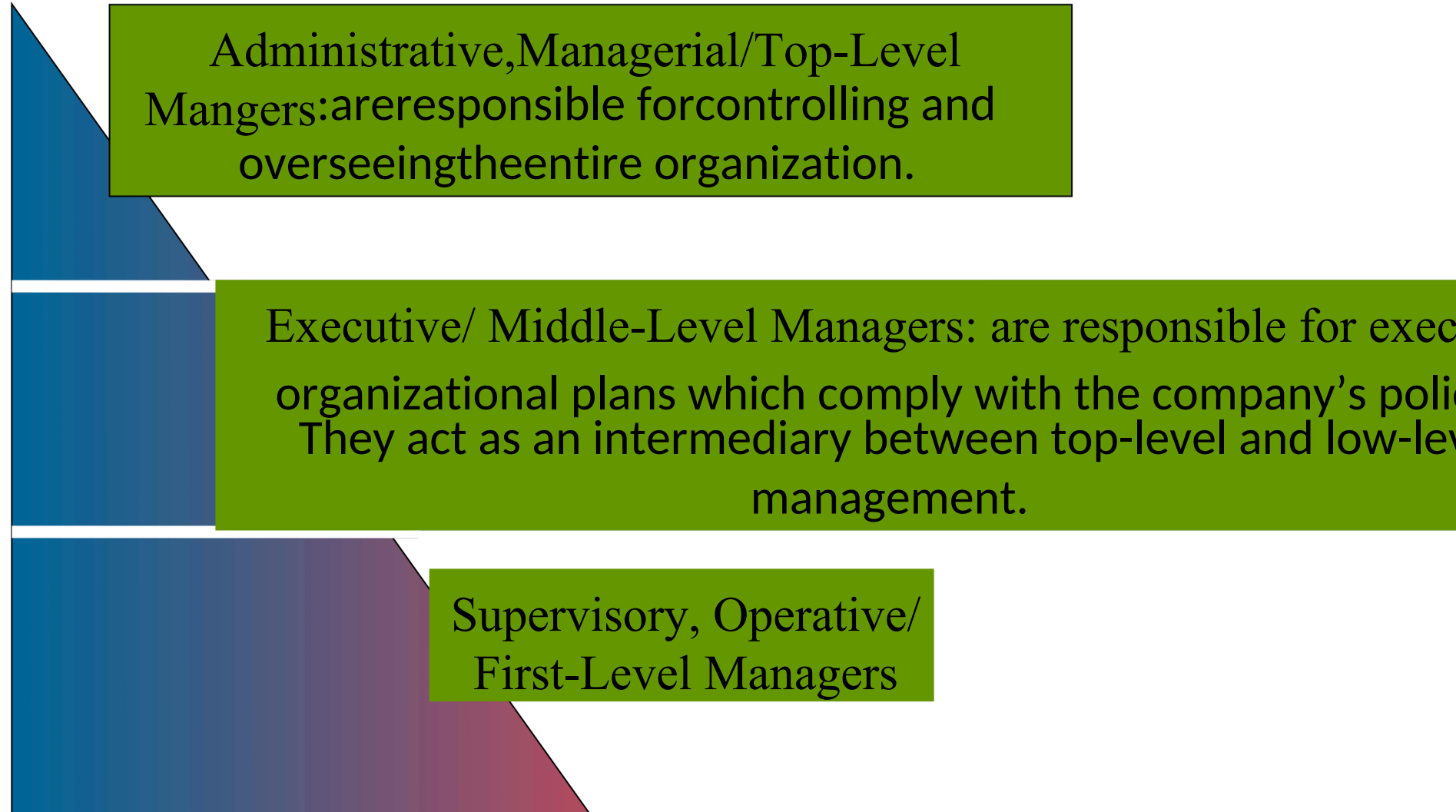
Management as a Profession

- **Well defined body of knowledge/specialized knowledge:** Management has well defined body of knowledge as in profession.

- **Formal Education and Training/Restrict entry:** Management has restricted entry through an examination or degree as in profession.

- **Presence of professional associations/ Representative Association:** All profession has some associations affiliated to it and even management has association affiliated to it.

Management as a Profession

- **Existence of ethical code/Code ofConduct:** For every profession there are some set of ethical codes fixed by the profession association. Management also has some ethical codes fixed by the concerned professional association.

- **Social Obligations/ Service Motive:** Management has some service motive as in a profession. A manager is responsible not only to its owners but also to the society and therefore he is expected to provide quality goods at reasonable prices to the society.

Levels of Managers and Skill Required

Levels of Management

Administrative,Managerial/Top-Level Mangers:areresponsible forcontrolling and overseeingtheentire organization.

Executive/ Middle-Level Managers: are responsible for exec

organizational plans which comply with the company's poli

They act as an intermediary between top-level and low-le

management.

Supervisory, Operative/ First-Level Managers

Administrative, Managerial, or Top Level of Management

- The ultimatesource of power and authority,since it oversees the goals, policies, and procedures of a company.

- Their main priority is on the strategic planning and execution of the overall business success.

- Laying down the objectives and broad policies of the business enterprise.

- Issuing necessary instructions for the preparation of department-specific budgets, schedules, procedures, etc.

Administrative, Managerial, or Top Level of Management

- Preparing strategic plans and policiesfor theorganization.
- Appointing the executives for middle-level management, i.e. departmental managers.
- Establishing controls of all organizational departments.
- Since it consists of the Board of Directors, the top management level is also responsible for communicating with the outside world and is held accountable towards an organization's shareholders for the performance of the enterprise.
- Providing overall guidance, direction, and encouraging harmony and collaboration.

Executive/ Middle-Level Managers

- The branchand departmentalmanagers form thismiddle management level.

- These people are directly accountable to top management for the functioning of their respective departments, devoting more time to organizational and directional functions.

- For smaller organizations, there is often only one layer of middle management, but larger enterprises can see senior and junior levels within this middle section.

Executive/ Middle-Level Managers

- Executing the plans of the organization in accordance with the policies and directives laid out by the top management level.

- Forming plans for the sub-units of the organization that they supervise.

- Participating in the hiring and training processes of lower-level management.

- Interpreting and explaining the policies from top-level management to lower-level management.

Executive/ Middle-Level Managers

- Sending reports and data to top management in a timely and efficient manner.
- Evaluating the performance of junior managers.
- Inspiring lower level managers towards improving their performance.

Supervisory, Operative/ First-Level Managers

- consists of **supervisors, foremen, section officers, superintendents,** and all other executives whose work must do largely with HR oversight and the direction of operative employees.
- managers at the lower level are primarily concerned with the execution and coordination of day-to-day workflow that ensure completion of projects and that deliverables are met.

Supervisory, Operative/ First-Level Managers

- Assigning jobs and tasks to various workers.

- Guiding and instructing workers in day-to-day activities.

- Overseeing both the quality and quantity of production.

- Maintaining good relations within lower levels of the organization.

- Acting as mediators by communicating the problems, suggestions, and recommendatory appeals, etc. of workers to the higher level of management, and in turn elucidating higher-level goals and objectives to workers.

Supervisory, Operative/ First-Level Managers

- Helping to address and resolve the grievances of workers.

- Supervising and guiding their subordinates.

- Taking part in the hiring and training processes of their workers.

- Arranging the necessary materials, machines, tools, and resources, etc. necessary for accomplishing organizational tasks.

- Preparing periodical reports regarding the performance of the workers.

- Upholding discipline, decorum, and harmony within the workplace.

- Improving the enterprise's image as a whole, due to their direct contact with the workers.

Classical Management Theories

History of the Era

WINDING RAILWAY MOTOR ARMATURES

Industrial Age

-Migration to cities

-Reliance on electricity and gasoline

-Changes both on the farm and in factories

-Autos, airplanes, movies, and radio became common
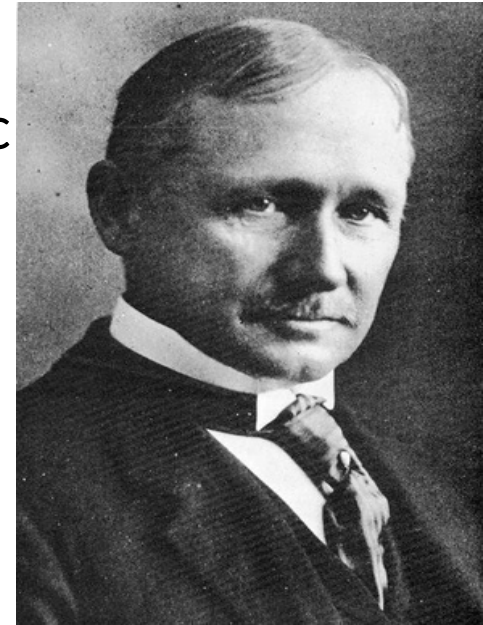
Classical Management Theories

- Classical ManagementTheories:Oldest Managementtheories and Give importance on achievingthe organizational goals.
  - **Scientific Management Theory (Fredric Taylor)**: Everything in the organization is a question for scientific investigation. Focus on increase productivity.
    - Micro level approach
  - **Administration Management Theory (Henry Fayol)**: focus on managing the entire organization instead of managing the individual. According to this "Getting things done by the people and through the people".
    - Managerial level approach
  - **The Bureaucratic Theory (Max Weber):** Bureaucracy means certain characteristics of the organization.
    - BigPicture level approach

Prior to Scientific Management

- Owner, manager,sales, andfrontoffice personnelhadlittledirect contact with production activity.

- A "superintendent" was responsible for all planning and staff functions.

- Worked with "journeyman" mechanics to try to schedule production. No recognized staff functions.

- Work methods were determined by individual mechanics based on

personal experience, preference, and what tools were available for the job. "Rule of Thumb"

Scientific Management Theory

- Frederick WinslowTaylor (20March 1856-21 March1915), widely known as F. W. Taylor, was an American mechanical engineer who sought to improve industrial efficiency.
  - Started as an apprentice pattern makerand machinistin1875
  - Joined Midvale steel company in Philadelphia as machinist in 1878
  - Rose to chief engineer in the same company after earning degree in engineering
  - Known as "The Father of Scientific Management"
  - His experience as apprentice, common laborer, foreman, master mechanic and chief engineer of the same company helped to know the problems and to see the great possibility for improving the quality of management.

SCIENTIFIC MANAGEMENT

- The systematic studyof relationships between people and tasks for the purpose of redesigning the work process to increase efficiency.

- It is the art of knowing what exactly you want from your men to do & then seeing that it is done in best possible manner.

- In simple words it is just an application of science to management.

Taylor's view about management.

- Taylor believedthat the industrial managementof his day was amateurish, that management could be formulated as an academic discipline.

- Best results would come from the partnership between trained and qualified management and a cooperative and innovative workforce.

- Each side needed the other and there is no need for trade unions.

Taylor's principles of management

The following are the Taylor's Principles of Scientific Management

1. Science, not rule of thumb

2. Harmony, not discord

3. Co-operation, not individualism

4. Maximum output, not restricted output

5. Specialization, not generalization

6. Scientific selection, training and development of persons, not on personal judgement

Taylor's principles of management - **Science, not rule of thumb**

- Inscientific methodstoimprove industrial efficiencythroughhigher productivity, Tayloridentifiedthe following conditionsandmethods forthis purpose.
    - **Standardization of working conditions:** Providing good working conditions: Adequatelighting, best temperatureand humidity, provision for seating,cleanliness, ventilation, Noise control etc.
    - **Standardization of working methods:** Analyze the work on scientific basis and determining the best possible method for doing a job. Taylor invented motion study technique. This study of scientific techniques eliminated the human wasted effort.
    - **Establishing the standard of performance:** Taylor found out the production time of each job by breaking a job into elements. Time study techniques were used for this purpose and standard time for a job was fixed. This was used to plan the daily work of each worker.

Taylor's principles of management

- **Harmony notdiscord:** Taylor said thatthe employer and employee should have friendly relations (harmony) among themselves. There should be no difference in opinion and dispute/discord. The interest of employer and employees should be same.

- **Co-operation, not individualism:** Taylor suggested that hearty co-operation between the management and the worker should be essential. The personnel should not always think their own interests and should not be selfish. General interest was more important than self interest.

Taylor's principles of management

- **Maximum output, not restricted output:** Taylor said that workers must be encouraged for higher production by giving incentive or higher wages. For this he introduced "Differential piece rate system". The workers produced above the standard level were paid high piece rate and those produced below standard level were paid a lower piece rate.

Taylor's principles of management

- **Specialization, not generalization:**Taylor said that the workers must be relieved from mental activities. He separated mental activity from physical activity. Mental activities were carried out by the office people where as physical activities were carried out by the office people where as physical activities were carried out by the people inside the factory. Taylor evolved functional organization structure.
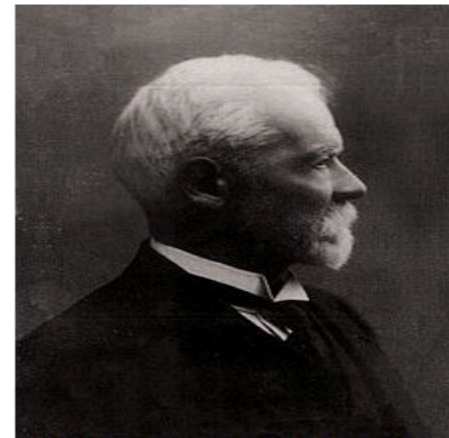
Taylor's principles of management

●**Scientific selection, training and development of persons, not**

a personal judgment: Taylor said that selection of workers should done scientifically. Right person should be selected for the right job. Taylor suggested that the workers should be given proper training before doing a job in order to increase the productivity. Promotions should be given for productive labors.

Administration Management Theory

- HenriFayol (29July 1841–19November1925), graduatedasa mining engineer in 1860. He published a book "General and Industrial Administration"
    - Joined as anengineer in mining company France.
    - He was appointed as General manager of that company. At that time company's financial position was critical and the loss was more.
    - Before his retirement in 1918, he developed company into a prosperous and one of the most famous coal mines in France.

Administration Management Theory (Henri Fayol)

- It is the process of managing information through people

- Administrative management focused on management process and principles of the entire organization.

  Fayol found that activities of an industrial organization can be divided into 6

  groups:
  - Technical: production, manufacturing
  - Commercial: Buying, selling
  - Financial: search for capital and its optimum use.
  - Security: protection of property and person
  - Accounting: balance sheets etc.
  - Managerial: Planning, organizing etc.

- He pointed out that these activities exist in business of every size.

Administration Management Theory (Henri Fayol)

- Approachofstudyingmanagementisdividedintothree parts
  I. **Managerialqualitiesandtraining:**Managerrequiresthese6types of qualities
    1. Physical (health, vigour)

       2.Mental (position to make right judgement)

       3.Moral (loyal, dignity)

    4. Educational (awareness)

       5.Technical (peculiar to the function being performed)

       6.Experience (araising from work)

    - Fayol Observed that the most important ability for a worker is a technical

    - The importance of managerial ability increases as one goes up the

Administration Management Theory (Henri Fayol)

II. General principles of management:

- The list of management principles is not exhaustive but suggestive
- Principles of management are not rigid but flexible.
- Fayol has given 14 principles of management

Administration Management Theory (Henri Fayol)

14 principles ofmanagement

1.**Division of work:** This principle leads to specialization in any field of activity. If a worker concentrates his efforts on a particular task, he will become more skilled in that activity. It increases productivity, quantity and quality of output. It got some disadvantages.

1.Worker suffersboredom becauseof repetitionofthesametypeofwork.

2.Difficult to reschedule if any worker is absent.

Administration Management Theory (Henri Fayol)

14 principles of management

2. Authority and responsibility:

- Authority is the power given to a person to extract work from his subordinates. Responsibility is the obligation of a person to perform his duties towards a job.
- Authority may be delegated whereas responsibility cannot be delegated.
- People often seek authority but not responsibility.
- The fear of responsibility spoils initiative and destroys other good qualities.
- Authority without responsibility and responsibility without authority are the major defects of any organization.
- Management should clearly arrange and distribute the Authority and Responsibility.

Administration Management Theory (Henri Fayol)

14 principles of management

3. Discipline:

- Discipline is **respect of agreements, sincere effort for completing a given task and outward marks of respect**.
- To maintain discipline requires
    - Good supervisors at all levels.
    - Clear and fair agreements
    - Judicial application of penalty
    - Effective communication

Administration Management Theory (Henri Fayol)

14 principlesof management

4. Unity of Command:

- For any action, an employee must receive orders and instructions from the supervisor only.
- Multiple commands will cause confusions and conflicts.
- Sound management should avoid dual commands.

Administration Management Theory (Henri Fayol)

14 principles ofmanagement

5. Unity of direction:

- There should be one head and one plan for each group of activities having the same objectives.

- •All the groups work together to achieve the common goal.

- •Unity of command cannot function without unity of direction.

Administration Management Theory (Henri Fayol)

14 principles of management

6. Subordination of individual interest to general intere

- An employee's interest is toearnmoney tomeethis personal needs where organization interest is to maximize the production and develop the business. The interest of organization is more important than the interest of an employee.

- It is necessary to maintain unity and to avoid friction among the employees. Therefore, supervisors should set the following to others to maintain general interest.

  - Fair agreements
  - Effective supervision
  - Good example

Administration Management Theory (Henri Fayol)

14 principlesof management

7Remuneration of personnel:

- Remuneration is the money paid to the employees for their physical and mental efforts incarrying outawork.
- It should be fair and satisfy both the employees and employers.

Administration Management Theory (Henri Fayol)

14 principles of management

8. Centralization:

- If most ofthe power and responsibilities are retained at top level management, theorganization is centralized.
- All the decisions are taken only by the top executive at the centre.
- If the power is delegated to the subordinates, the organization is decentralized. Management is effective for a decentralized form.
- Delegation of authority to subordinates helps to take quick decision on all important problems.

Administration Management Theory (Henri Fayol)

14 principles of management

9. Scalar Chain:

- Scalar chain means **line of authority**

- Instructions and orders should be sent from top level to the bottom level only through the line of authority.

- There should be an unbroken line of power and command from top level to bottom level.

- Overlapping any one in the organization structure will spoil the performance of the management system.

Administration Management Theory (Henri Fayol)

14 principles of management

10. Order:

- This principle deals with the arrangement of things and persons.
- Two types:
    - 1. Material order: A place for everything and everything in its place.
    - 2. Social order: A place for everyone and everyone in his place.
    - Scientific selection, training and placement are necessary so that materials can be easily taken out and men can be easily located.

Administration Management Theory (Henri Fayol)

14 principles of management

11. Equity:

- The manager should treatthe employees equally andkindly.

- The employee's morale,sincerity and loyaltywill beimproved.

- There will not be any friction among the employees.

Administration Management Theory (Henri Fayol)

14principles of management

12. Stability of tenure of personnel:

- Stable and secure work force is an asset to any organization.

- Itwill take some time for an employee to work efficiently in his job even if he has the required skill and knowledge.

- The management should create favorable working conditions by providing good salary, promotion opportunities, welfare facilities etc.

Administration Management Theory (Henri Fayol)

14principlesof management

13. Initiative:

- Initiative is the powerof thinking and executing anytask with enthusiasm voluntary.
- When employees come forward with new ideas, new methods etc., they must be encouraged
- It improves good morale among the employees

Administration Management Theory (Henri Fayol)

14principles ofmanagement

14. Espirit de corps:

- ItisaFrench wordmeaning **feelingofharmony and union among personnel**of anorganization.
- Management should treat the employees kindly and equally to develop co-operation among them.
- Management should avoid the policy of **divide and rule**.

Administration Management Theory (Henri Fayol)

- **3. Elements of Management**
  - Fayolbelievedthatmanagement should be viewed as a process of 5 elements/functions:
    - **Planning:** managers forecast the events and developing an operating plan
    - **Organizing:** determine appropriate combinations of resources such as men, machine, material to accomplish task.
    - **Commanding:** directing the activities of subordinates through two way communication
    - **Coordinating:** arrange and integrate efforts towards unity of action
    - **Controlling:** ensuring actual activities are according to the plan set

The Bureaucratic Management Theory

- Max Weber(21April1864– 14June1920),aGerman scientist,definesbureaucracy as a highlystructured,formalized, andalsoanimpersonal organization.

The Bureaucratic Theory (Max Weber):

- He found some outcomes such as

  - In traditional authority, Most workplaces used relationships, kinship or customs to lead and make decisions.

  - In particularism, employees were hired or fired for a variety of non-organizational reasons such as religion, race, sex and relational or family connections – favoritism.

The Bureaucratic Theory (Max Weber):

- He suggests,

- Organizations shouldactrationallytoachievetheirgoals
  - Clarified leadership structure
  - Clarifiedrules fordecision making

- Legal-Rational Authority
  - Organizations shouldlook like theGovernment and the Legal System
  - The legitimate authority of leadership positions should be formalized and fixed to those positions
  - Consistent with societal law, organizations should be run by formal rules and policies
  - Not Traditional, Family based leadership, Not Charisma-based leadership approach to organization

The Bureaucratic Theory (Max Weber):

- Bureaucracy has different parts
  - Fixed division oflaboramongparticipants:dividework intosmall, separate steps
  - Hierarchy of offices
  - Set of general rules that govern performance, Decision making on rational and objective criteria
  - Rigid separation of personal life from work life
  - Selection of personnel on the basis technical qualifications and equal treatment of all employees. Employment and promotion based on demonstrated competence
  - Participants view employment as a career; tenure protects against unfair arbitrary dismissal. Fixed salary based on status and guaranteed pension as security for old age

Neo-Classical Management Theories

Neo-Classical Management Theory

- There is coexistence of informal organization within very formal organization and both affect each other
- Human beings are not independent, they are mostly interdependent in an organization.
- Behavior of an human being is affected by so many social and psychological factors.
- There is always a high level of conflict between organizational goals and individual goals.
- Motivation of human being plays a key role in the growth of the organization which is a highly complex process.
- Terminologies: Flat Structure, Decentralization, Informal Organization

Criticism of Neo-Classical Management Theory

- This theory based onflat structure that lack hierarchylevel, which may affect authority, delegation.

- This theory lacks unified approach. It is just a modification of Classical theory of management.

- This theory is based on many assumptions which may not be true (one cannot satisfy everyone).

Elton Mayo 1880-1949 – Human Relations Approach

- He was interested in:

  - Motivation
  - Commitment
  - Human emotion
  - Worker management relations

Elton Mayo

- Hehighlighted the importance of communication between management and workers and for managers to show respect to their staff

- He identified that work satisfaction lay in recognition, security and a sense of belonging rather than monetary rewards

Hawthorne studies 1924-1932

- Itis an experiment conductedatHawthorne plant of Western Electric Company of Chicago.

4 phases to the experiment:

1. The Illumination Experiments

2. The Relay Assembly Test Room

3.The Massive Interviewing Programme

4.The Bank Wiring Observations Room

1. Illumination experiment: (1924 – 1927)

- Experiment was conductedto find whether the lightingis having effect on the productivity or not.

- Two groups of female workers were formed and each group contains five female workers.
  - Experimental group
  - Control group

- First group was exposed constant intensity of lighting.

- Second group was exposed to different intensities of lighting.

Results and Conclusions

- The productivity of both groups were found same.
- There was no change of productivity even though both groups were exposed to different intensities of lighting.
- Production was influenced by factors other than changes in physical conditions
- By analyzing the above experiment, find that illumination lighting has no effect on productivity.

Relay Assembly Test Room (1927 – 32)

- Two women workers were chosen and they were asked to choose four more co-workers on their own choice. They were placed in a separate test room.

- The conditions of work were gradually changed during first two years.

- Incentive scheme and group bonus were introduced. Then break hours was increased. Working hours were reduced. Number of working days per week were reduced. Free snacks were offered.

- While doing all these change it was discussed with the workers. Productivity was increased by 30%.

- Then suddenly all the schemes were withdrawn. All the privileges were taken after consulting with the workers. **Now also, the productivity was increased by 30%.**

Results and Conclusions

- The workerswere given more freedom
- They were discussed for every change and so they developed the sense of responsibility.
- They maintained the self-discipline.
- They developed a good relationship with the supervisors.
- Because of the above factors, the workers change their attitude towards their work. So the productivity was increased – Not because of the attractive scheme introduced.
- The productivity was increased because the workers felt that they were given due importance.

The Massive Interview Programme

- 20,000 interviewsconducted
- Set of prepared questions on workers feelings towards:
  - Supervision
  - General conditions at work
- However, workers wanted to talk about other conditions
- Interviewers changed their style to non-directive, open questions
- Workers true feelings and attitudes were analysed
- By observation, it was known that individual workers behaviour was mostly influenced by group behaviour.

Bank wiring observation room

- There were nine women, three soldermen and two inspectors,who were paid on group basis.
- It was expected that, each worker would work more to earn more – to get more group bonus. However, it happened differently.
- The group of workers fixed a target. No workers were allowed to produce more.
- The individual feared that, if the production is more, then it would lead to unemployment.
- The individual feared that once he produced more, then management would raise the standard.
- Some workers normally produced less. To protect them, others produced less.

Hawthorne Experiments: Summary

- To attain the organizational goals, employee attitude is very much important. The employee should understand the organisational goal. He should be co-operative voluntarily to attain the goal. He should dedicate himself to attain the goal.
- The employee will perform satisfactorily, if he is satisfied with the management and with his co-workers.
- The employee's job satisfaction is also important for him to perform well.

Hawthorne Experiments: Summary

- If the management changes its policy, then the change should be explained clearly to the employees. The employee should know the actual meaning of the change.
- The management cannot collect any correct information by analysing an individual employee. However, it can gather real information by analysing the group behaviour.
- By this experiment, the management identifies the problems with employees.

Hawthorne Experiments: Major factors

- Social factor: the productivity is set by the society/group of workers. Although a worker isstrong enough to produce more, he will not produce more because of social norms

- Group: the group determines target and group norms. Group behaviour is more important for the management to deal with group.

- Leader: informal leader is elected by the workers and he is important than formal leader. But supervisor (formal leader) is appointed by the management. Informal leader is directing the group. He is the important person to be dealt by the management. If the informal leader is not loyal to the workers, then he will be dethroned by the workers.
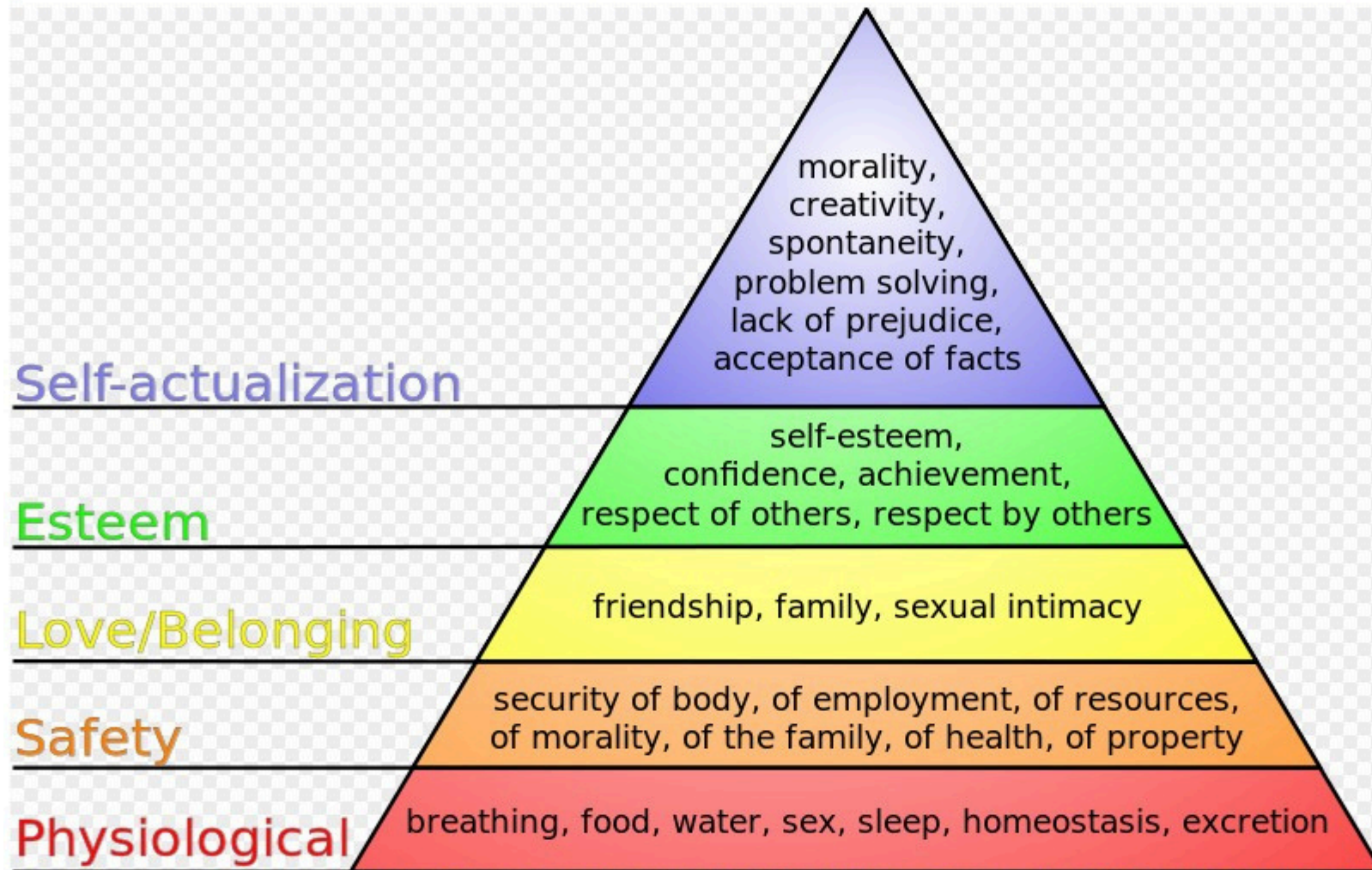
Hawthorne Experiments: Major factors

- Communication: workers shouldbe clearly explained about the changes made by the management. Workers should be discussed for important decision making process so that they will have the responsibility to achieve the target.

- Conflict: The employee should not have any conflict of objectives. He should change himself to adjust with the organisation. Adjustment is very much important otherwise, the output may decline.

- Supervisor: The increase of productivity is also attained by the

proper supervision. He should know how to get things done. Cleverness of supervisor is needed to maintain proper relationship.
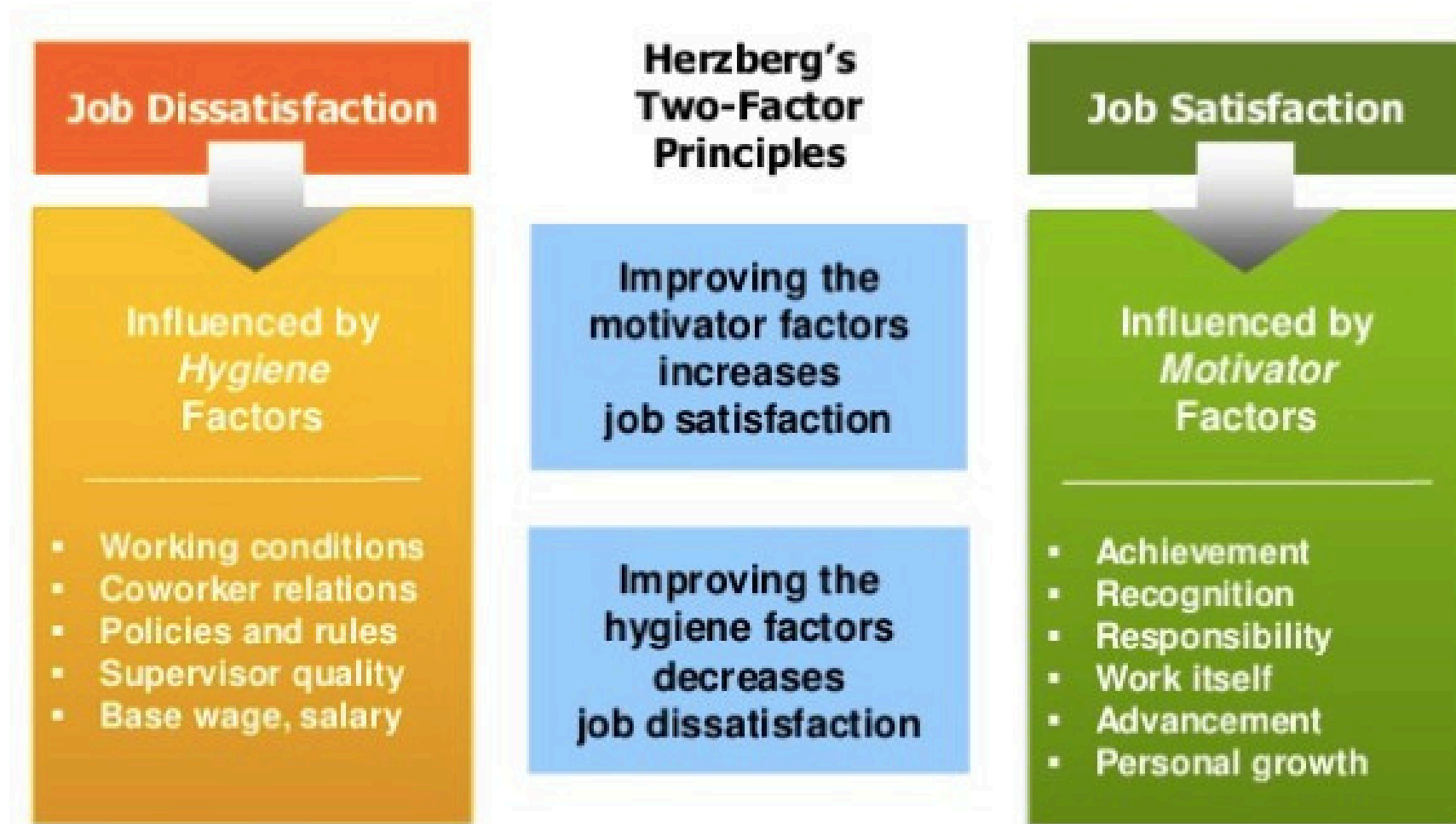
Neo-Classical Theory – Behavioral Science Approach

- Itisa redefined form of human relationsapproach emerged in lateyears of 1940s and emphasis on group behavior
- Individual behavior, Motivation, job design, leadership, communication, group dynamic & participative management are the core of the approach.
- Emphasis on self direction & self control rather than control imposed by top management.
- This approach is the basis of management discipline – organizational behavior
- This approach is universally not applicable to all the organizations which operate in different social, religious and cultural background

Behavioural Science approach – Abraham Maslow (Maslow's Hierarchy of Needs)

Behavioural Science approach – Frederick Herzberg (Two-factor theory)

Job Dissatisfaction

Influenced by *Hygiene* Factors

- Working conditions
- Coworker relations
- Policies and rules
- Supervisor quality
- Base wage, salary

Herzberg's Two-Factor Principles

Improving the motivator factors increases job satisfaction

Improving the hygiene factors decreases job dissatisfaction

Job Satisfaction

Influenced by *Motivator* Factors

- Achievement
- Recognition
- Responsibility
- Work itself
- Advancement
- Personal growth

Behavioral Science approach – Douglas McGregor (Theory X and Theory Y)

TheoryX Assumes:

- Need to be controlled

- People are lazy

- Will avoid working if possible

- Strict rules need to be imposed

- Need incentive schemes

- Have to be directed to do things that they don't enjoy

Theory YAssumes:

- People find satisfaction in their work

- Right environment = people will be productive

- Can think themselves and make decisions

- Share ownership of tasks.

- Want to be involved

- Have good ideas

- Can engage in some level of self management

- Will find work more rewarding if given responsibility and a variety of taks.

Behavioral Science approach – David McClelland(NeedsTheory)

- Need for Power – Desire to influenceorcontrol others, be responsible and have authority over others

- Need for Achievement – Desire to accomplish something difficult, attain high standards of success, master complex tasks, surpass others

- Need for Affiliation – Desire to form close personal relationships and friendships, avoid conflict.

Behavioral Science approach – Rensis Likert (Likert Scale)

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1	2	3	4	5

Neo-Classical Theory – Behavioral Science Approach

Behavioral Science theorybelieves that:

- Organization is a socio economic and technical system

- A variety of factor influence the interpersonal and group behavior of people in organizations

- Individuals working in an organization have goals which may differ from organizational goals

- Conflict is inevitable

- Individuals differ in personality, attitude, beliefs, perception etc

- Motivated workers are key to productivity

- High performance can better be achieved by self direction and control

- An open and trusting organizational climate improves productivity

Human Relations Approach and Behavioral Science Approach

Human RelationsApproach	Behavioral Science Approach
Emphasis onIndividual Needs	Emphasis on group behaviourand individual motivation
Assumes organization as social system	Assumes organization as a socio-technical economic system
Assumes workers are not scientifically verifiable	Assumes workers are scientifically verifiable
Believes all workers have similar set of needs	Assumes individuals are different and need structure is dynamic
Originated from Hawthorne studies	Emerged by refinement of human relations approach

Modern Management Theories

Modern Management Theory

- It focus on the improvement of organization, employees
- Its started after 1960s.
- In the words of W. G. Scott, the distinctive qualities of

  modern organization theory are its
    - Conceptual analyticalbase
    - Its reliance on empirical research data
    - Its integrating in nature

Modern Management Theory

- It's composed of 3 approaches
  - SystemsApproach: Interrelationof components or subsystems to formaunified wholesystem.
  - Contingency or situational Approach: Emerged from Systems approach, Actions depend on situations
  - Quantitative Approach Theory: uses the scientific method especially mathematical models

System Approaches to Management

System Concept

- An organization is a totality of many, inter-related,inter-dependent parts, put together for achieving the organizational objectives.

- A system is defined as a sum total of individuals but inter-related parts (sub-systems) and are put together according to a specific scheme or plan to achieve the pre-stated objectives.

- A system can be biological (human body), physical (machine) or social (commercial organization, voluntary bodies etc.).

- A system has the following components:
    - A number of parts ofsub-systems whichwhen puttogether inaspecificmannerform a whole system.
    - Boundaries within which it exists.
    - A specific goal or goals. This goal is expressed in terms of an output which is achieved by receiving input and processing it to form the output.
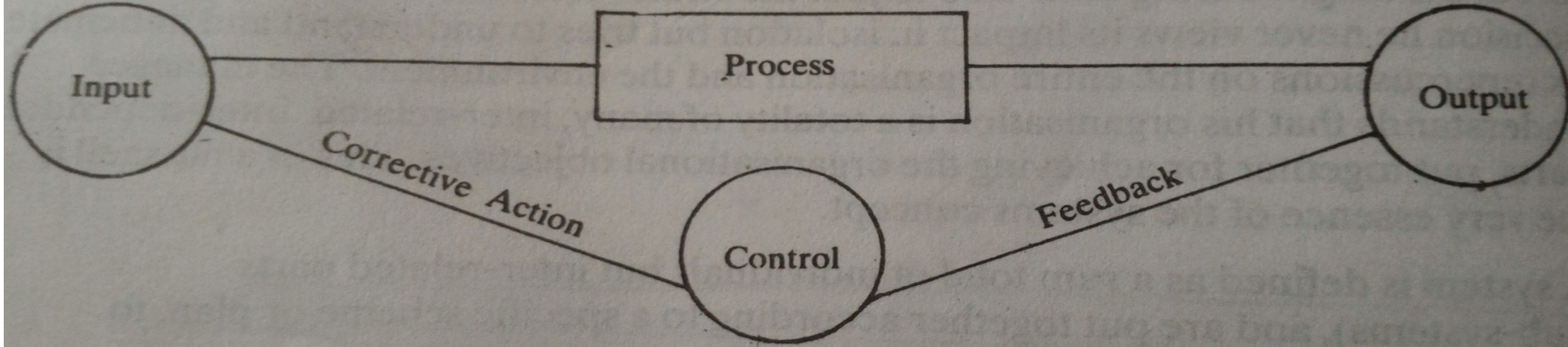   - Close inter-relationship and inter-dependency among the various sub-systems.

System Concept

The inter-relationship of the sub-system can be definedin terms of:

• The flows which exist among them, such as flow of information, money, materials etc.

• The structure within which they relate to each other. This structure may be physical, geographic or organizational and shall be dealt with in the section entitled 'organizing'.

• The procedures by which the sub-systems relate to one another. By procedures we mean those planned activities which affect the performance of the entire system. In the context of an organization, this refers to planning.

• The feedback and the control process mechanisms which exist to ensure that the system is moving towards its desired objectives. This shall be referred as controlling.
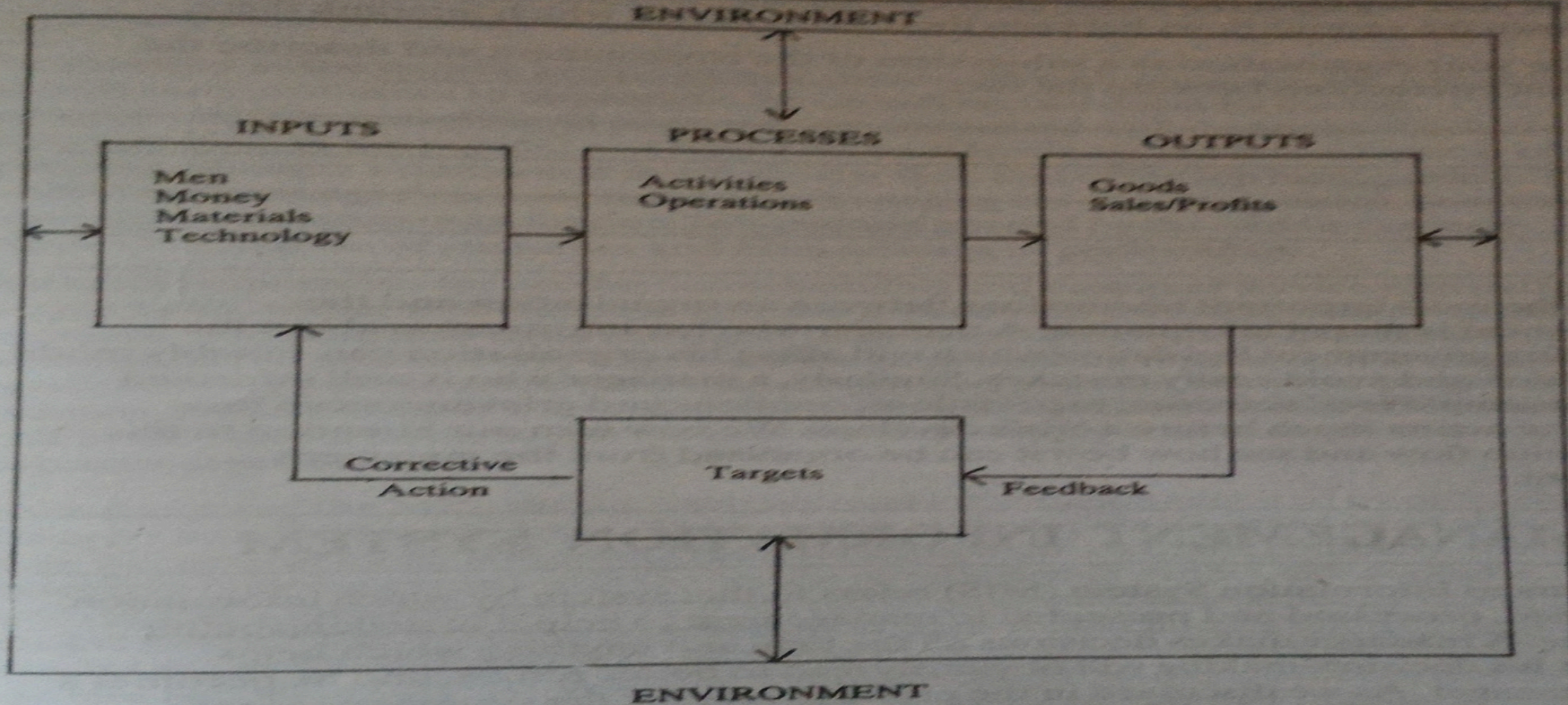
A Closed System

Figure I: A Closed System

- A system can be closed or open. A closed system is self-sufficient and self-regulatory and has no interaction with the environment in which it exists.
- The feedback from the output triggers o a control mechanism which then regulates the input to bring back the output to the desired level.
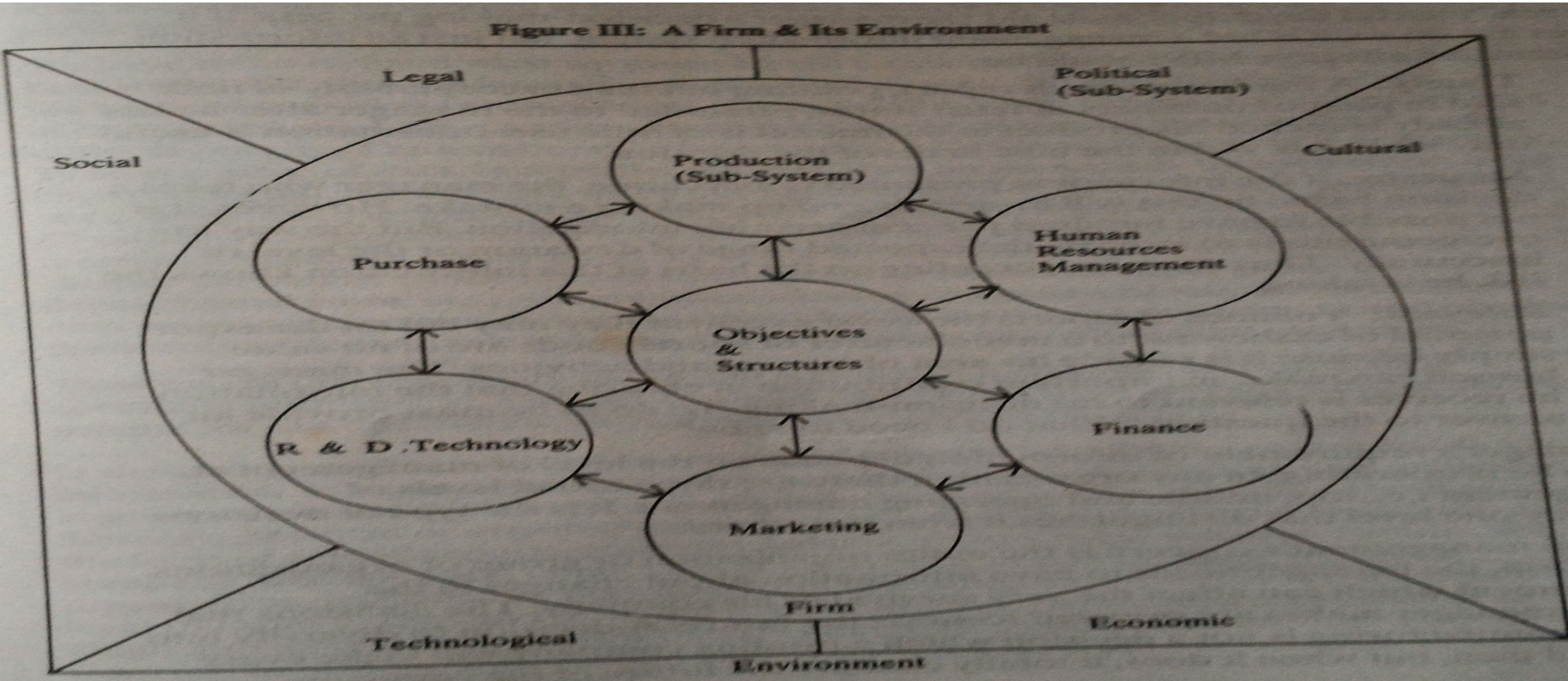
An Open System

Figure II: An Open System

An Open System

- An open system is one which interacts with theenvironment in which it exists.

- All living, biological and social systems are examples of open systems.

- An organization is an open system and its sub-systems are its various divisions and departments. But at the same time, it is a subsystem of the environmental system within which it operates.

A Firm and its Environment

Figure III: A Firm & Its Environment

The environment itself consist of social, economic, political and legal sub systems.

A Firm and its Environment

- The importanceof the system concept is thatit helps manager to identify the critical sub-systems in his organization and their inter-relationships with each other and the environment.

- A system is always seeking an equilibrium state, that is, where all the subsystems are at the optimum level, in tune with and at rest with each other and the desired output is being achieved.

Contingency Approach

- Systems approachoffers models which may notsuit every type of organization

- A structure suitable for one unit may not be suitable for another.

- Contingency approach suggest that one size doesn't fits all.

- Structure or Design must tailor made as per the units, organization and situation.

The Contingency Approach

- Also sometimes called the *situational approach.*

- This approach suggest that needs, requirements, situations of a particular organization should be considered while designing an organizational structure.

  - There is no one universally applicable set of management principles (rules) by which to manage organizations.

- Organizations are individually different, face different situations (contingency variables), and require different ways of managing.

- It tries to identify the best technique that will be effective in a particular situation at a particular time.

- This attempts to integrate all the management approaches.

Popular Contingency Variables

- Organization size
    - As size increases, so do the problems ofcoordination.

- Routineness of task technology
    - Routinetechnologiesrequireorganizationalstructures,leadershipstyles, and control systemsthat differ fromthoserequired bycustomizedornon-routine technologies.

- Environmental uncertainty
    - What works best in astable and predictable environmentmay betotally inappropriate ina rapidly changingand unpredictable environment.

- Individual differences/ People working in the organization
    - Individuals differ in terms of their desire for growth,autonomy, tolerance of ambiguity, and expectations.

The Contingency Approach

- The successful application ofone technique inonesituation will not be successful in another situation

- Examine each situation in terms of how it is affected by the contextual, organizational and human dimensions.

- Contingency theory is designed to provide the manager with the

  capabilities to examine numerous possible solutions to a problem.

Quantitative Management Theory

- The quantitative approachto management involves theuse of quantitative techniques, such as statistics, information models and computer simulations to improve decision making.

- Managers can use computer models to figure out the best way to do – saving both money and time

- **Mathematical modeling** helps to make projections that are useful in the planning process.

- **Inventory modeling** helps control inventories by mathematically establishing how and when to order a product.

- **Queuing theory** helps allocate service personnel or workstations to minimize customer waiting and service cost.

Criticism of Modern Management Theory

- It isnot astandalone theory rathermixture ofdifferent theories
- It does not identify the precise relationships among the organization and its external system.
- It is not useful for smaller organizations

Tasks and Responsibilities of a Professional Manager

Professional Manager

Takes Various Decisions

☐HR decision
☐Financial decision
☐Marketing decision
☐Strategy decision
☐Operational decision

Professional Manager – HR Decisions

- Recruitment
  - Hiring process
  - Asper requirement

- Retain
  - Making jobinteresting
  - Games, transfer policy, grievance redressal
  - Rotation

- Promote
  - Increase number of hierarchy, individual feels growth
  - Assessing progress
  - Increment, decrement
  - Demotion, firing

- Motivate
  - More work in name of enrichment, training
  - Bonus, salary, incentive, appreciation letter, award etc.

Professional Manager – Financial Decision

- Profit–check process feasibility
- Evaluation of strategy – which will provide better return on investment

  Financing options – lower cost of money

  Financial efficiency – tendering, purchase

Professional Manager – Marketing Decision

- Expand/Exit from market

- Promote

- Advertise

- Introduce product

- How to gain market share

Professional Manager – Strategy Decision

• Which project

• Where

•When

•How

•Long term impact

•Decision cannot be reverse

Professional Manager – Operational Decision

- Working efficiency
- Logistics
- Innovation
- R&D/ Technology
- Cost cutting

Tasks and Responsibilities of Professional Managers

- Providing purposefuldirection tothe Firm

- Managing Survival and Growth

- Maintaining Firm's Efficiency in terms of profit generation

- Meeting the challenge of increasing competition

- Managing for innovation

- Building Human organization

- Retaining talent and inculcating sense of loyalty.

Tasks and Responsibilities of Professional Managers

- Sustaining leadership effectiveness
- Maintaining balance between creativity and conformity.
- Postponing managerial obsolescence
- meeting the challenge of change
- Coping with growing technological sophistication
- Coping with growing public criticism and political opposition- both objective and irrational
- Coping with increasing levels of aspiration
- Maintaining relations with various society segments.

Responsibilities Of Management To Society

- Optimum utilization of resources Cordial industrial
- relations Sound leadership and motivation Expansion,
- growth development Satisfactions to consumers Fair
- return to investors Provide financial support to social
- and cultural activities Create employment opportunities
- Use a part of project made for social good Improve
- quality of products
-
-
-

Responsibilities towards Stakeholders

- Responsibility towards
  - Customers   Shareholders
  - Employees   Suppliers
  - Distributors and Retailers
  - Industry and competition
  - Union   Government
  - Society
  -
  -
  -

Responsibilities towards Customers

- Customer mostimportantproviderevenue
- Quality of product
- Reasonable price
- Reliable after sales service
- Grievance redressal
- Avoid unethical promotion.

Responsibilities towards Shareholders

- Abletoearn profiton their capital
- Shareholders are owners, keep them informed on all important decisions, activities and results.
- eg: Satyam Computers – Ramalinga Raju

Responsibilities towards Employees

- Internalcustomer. Satisfiedemployeecan makesatisfiedcustomer.
- Fair wages and salaries
- Compliance with the statutory obligation of provident fund, gratuity, insurance, bonus.
- Work environment & Safety
- Need for internal marketing
- Township, education for children
- Need for CSR activity within company
- Free of child labour, bonded labour, workers suffering from diseases because of unhealthy, unsafe working environments.

Responsibilities towards Suppliers

- Part of supply chain.Provide input.Sometime needs help, credit, technology

- Need timely payment

- Make partner in supplies by implementing JIT (Just-In-Time, ERP (Enterprise Resource Planning) etc.

Responsibilities towards Distributors and Retailers

- Linkbetween the firmand theactualcustomers
- Source of valuable feedback
- Timely quality supplies
- Motivate dealers to push products harder. Provide support – extending credit, sharing promotion cost, after sales service and decoration of showroom.

Responsibilities towards Industry and Competition

- Competitors associatesto lobbyfor or representindustryeg. OPEC countries.

- Protect and promote the interests of the industry, seek concessions from government.

- Provide a forum for sharing and disseminating information

- Healthy competition encourages firms to improve their performance and nurtures progress.

Responsibilities towards Union

- Unionis friend of the firm
- Acknowledge the bargaining power
- Attempt to involve the union in the process of managing the firm
- Relationship should be based on mutual trust.

Responsibilities towards Government

- Pay tax/duties timely
- Follow legal framework

Responsibilities towards Society

- Avoid pollution – Bhopal Gas tragedy
- Social, economic development of those who lost livelihood
- Another way of marketing, repute building ultimate customers